Notes and Precautions

Product safety notice
- To ensure the safe operation of ECLIPSE products, please read the owner's manuals carefully prior to using.
- ECLIPSE is not responsible for any accident or damage due to improper installation, connections or products modified in any way.

Warning
- All products are intended for DC 12-Volt operation in negative grounded vehicles only. Never use them in 24-Volt vehicles such as heavy trucks or diesel cars with cold-region specification, aircraft or marine environments unless specifically rated to handle these conditions.
- Do not adjust controls while driving. To adjust the controls, stop the car in a safe location.

Caution
- Installation of products requires experience and knowledge. Ask your ECLIPSE retailer for proper installation.
- ECLIPSE cannot guarantee that every product it manufactures will be able to be installed in every vehicle model or make. To be sure, please consult your ECLIPSE retailer.
- In some cases due to installation-related considerations, additional connecting cables may need to be purchased for an ECLIPSE product.
- The rear view camera is a parking aid. It must be used only to supplement your vehicle's side view and rearview mirrors. It is not a substitute for mirrors and careful driving.
- Do not remove the HDD from the head unit. ECLIPSE is not responsible for any loss of data, damage or malfunction to the disk drive mechanism resulting from unauthorized removal or tampering with the HDD.
- Please be sure to follow instructions provided in the installation manual for correct procedures as incorrect installation may affect driving-related operation and/or airbag operation.
- Please make sure only the official parts supplied with the unit are used. Do not substitute other parts as it may affect operation or compromise unit build integrity.
- Optimal MP3 and WMA file reproduction quality depends greatly on the original encoding process. Depending on the original encoding, files may sometimes not play back properly.
- The ECLIPSE navigation system requires its dedicated database for optimal performance. Do not insert other database DVDs that may cause the unit to malfunction or not respond.

General
- Product design and specifications are subject to change without prior notice or obligation as ECLIPSE reserves the right to constantly seek to improve its products.
- Due to characteristics and properties of various photography and printing processes, the color(s) of the actual product may slightly differ from those shown on these pages.
- Some screen images shown are simulated.
- Some graphic examples of ECLIPSE Web services may be from pre-release software and could vary slightly from the final version.

Licensing and Trademarks
- "Dolby", "Pro Logic" and the double D symbol ◻◻ are trademarks of Dolby Laboratories and the Dolby Laboratories Licensing Corporation.
- "dts" and "dts Digital Out" is a trademark of Digital Theater System, Inc.
- HD Radio is a trademark of iBiquity Digital Corporation.
- SIRIUS SATELLITE RADIO is a trademark of SIRIUS Satellite Radio Inc.
- Memory Stick is a registered trademark of Sony Corp.
- Magic Gate is a registered trademark of Sony Corp.
- NAVTEQ ON BOARD is a trademark of NAVTEQ.
- ICEpower® is a registered trademark of Bang & Olufsen ICEpower a/s.

Others
- Some recent audio discs may resemble conventional music CDs but are technically not Compact Discs (CD Red Book format) because of the copy protection technology employed. ECLIPSE cannot guarantee operation and performance if these discs are used.
- DVD-R/RW and DVD+R/RW playback is possible only for discs formatted for video mode.
- VR (Video Recording) mode-recorded discs and discs not finalized will not play in the unit.
- Some PC-authored discs may not play due to software application settings during authoring.
- DVD-R/RW, DVD+R/RW and CD-R/RW playback quality may be affected by disk surface condition and disc format initialization process.
- DVD-R/RW, DVD+R/RW, CD and CD-R/RW discs may not operate perfectly on unit due to disc imperfections.
- DVD-R/RW, DVD+R/RW, CD and CD-R/RW disc performance may suffer if a disc exhibits excessive wear, dirt and scratching
- ATRAC3 is an efficient compression codec for digital music files, allowing files to take up just 1/10 their uncompressed size without degrading audio quality.
- Playback of song data is only possible on Magic Gate-compatible memory stick devices.
- Memory Sticks up to 128MB can be used. Initialization must be executed with Windows 2000 or later.
- ECLIPSE is not responsible for any data loss on a Memory Stick or HDD due to unit failure or malfunction.
- Recorded using ATRAC3 compression, an effective compression codec with minimal negative effect on sound quality.
- Song storage can be less than the representative number of song files depending on each song's bit rate and sampling frequency.

Operation notes
- DVD-Video compatible units are only compatible with NTSC standards and Region-1 DVD-Video discs.
- DVD-Video is disabled when the vehicle is in motion. Inserting a DVD-Video will only allow the audio to be heard.
- The Global Positioning System or GPS was developed in the United States. It is a system that pinpoints a current position making use precisely of radio waves transmitted to earth from 3 or 4 GPS satellites.
- GPS data can sometimes be unavailable due to circumstances such as:
  - Interrupted GPS satellite radio waves because of geographical interference factors such as buildings, tunnels, elevated roads and similar conditions.
  - Unsatisfactory reception due to objects being on or in the near vicinity of the GPS antenna.
  - Interrupted transmission service may sometimes result from periodic maintenance or upgrades being performed by the US-based GPS tracking control system.
  - Transmission can be interrupted or degraded when a digital cellular operating on a 1.5GHz frequency rate is being used in the vicinity of the GPS-enabled unit.

AVN-specific
- AVN70D map data compiled as of October 2004.
- AVN50D map data compiled as of December 2004.
- AVN20D map data compiled as of December 2004.
- Do not follow a navigation route if it could place you in an illegal, unsafe, or dangerous situation.
- Navigation controls cannot be operated in a moving vehicle.
- Please do keep in mind however that since emergency service providers sometimes change locations and services, a phone call should be made first to verify current availability before proceeding to the destination.

FUJITSU TEN LIMITED
Contact: FUJITSU TEN CORP. OF AMERICA
19600 So. Vermont Avenue, Torrance, CA 90502
Call: 1-800-55-ECLIPSE (Dealer Locator)
1-800-233-2216 (Information)

www.eclipse-web.com

Sales Manual

ECLIPSE

AVN® AUDIO VISUAL NAVIGATION

ECLIPSE 2006 models

FUJITSU TEN

Music Driving On

To make a driving better and a more enjoyable experience. That's always been ECLIPSE's mission since we started crafting mobile electronics over half a century ago. We focus on creating products that communicate the passion and emotion in music. Today ECLIPSE also manufactures in-car visual entertainment along with multichannel sound to create extraordinary in-car theater products. And combined with technologies such as navigation and internet-based system customization, the latest generation of products undeniably enhance the total driving experience.

ECLIPSE 2006 models

From a high-grade 1-DIN HDD model to a cost-effective 2-DIN model. ECLIPSE offers products with audio, video and navigation systems integrated to satisfy the needs of your demanding customers!

Advanced Utilities

Provide information such as detailed North American street maps to make your driving easier and safer.

Quality Entertainment

Offers more enjoyment and stunning entertainment to rear seat passengers while being driven.

Impressive Sound

Innovative DSP and 24-bit ΔΣ DAC for high quality sound.

Cutting-edge featured and superior performance — ECLIPSE's AVN cost-effective products offer you both!

		Sound	Navigation	Others
HDD Navigation	AVN70D ▸▸▸ P. 05 HDD Navigation System with 7 " Wide TFT Display and DVD/MS Multi-Source Receiver	DVD-VIDEO / DVD±R/RW CD, CD-R/RW / WMA MP3 / FM/AM Memory Stick Duo (ATRAC3) / 24-bit ΔΣ DAC MOSFET 50W × 4 Crossover / Time Alignment Parametric EQ	Ultima Engine 1.8" 20GB HDD 7" Wide TFT Display (Touch Panel)	Wallpaper Dual-Color Illumination Security System (Detachable Front Panel)
	DCU105 ▸▸▸ P. 08 5.1ch Decoder/AV Matrix Unit	DCU105 Connected 5.1ch Decoder (Dolby Digital 5.1ch, DTS 5.1ch) / Dolby Prologic II Crossover Pro / Time Alignment Pro (Auto, Manual) Parametric EQ Pro / AV Matrix Selector E-iSERV (Audio Customize)		
DVD Navigation	AVN50D ▸▸▸ P. 09 DVD Navigation System with 6.5 " Wide TFT Display and DVD Multi-Source Receiver	DVD-VIDEO / DVD-R/RW CD, CD-R/RW / MP3 Memory Stick / FM/AM 24-bit ΔΣ DAC / 50W × 4	DVD 6.5" Wide TFT Display (Touch Panel) Street map	iPod® control
	AVN20D ▸▸▸ P. 09 DVD Navigation System with 6.5 " Wide TFT Display and CD Multi-Source Receiver	CD, CD-R/RW / MP3 FM/AM / Graphic EQ 24-bit ΔΣ DAC / 40W × 4	DVD 6.5" Wide TFT Display (Touch Panel) Street map	iPod® control

Options

NEW
MRE-700
7" widescreen monitor

MRE-700W
7" widescreen headrest monitor package
Includes monitor x 2, RAS-100 AV Matrix selector x 1, dedicated wireless remote control.

NEW
WHP-100
Wireless headphones

NEW
iPC-106 Made for iPod
Interface Adapter for iPod®

NEW
E505CSP
Center speaker with power amplifier

BEC105
Rear view camera

HDR105 HD Radio READY
HD radio tuner unit

SIR-ECL1 SIRIUS READY
ECLIPSE compatible SIRIUS satellite radio tuner

TVR105
TV tuner

RMC105
Wireless remote

DCU105
5.1 ch decoder/AV matrix unit

CH3083
8-disc CD changer with magazine unit

Responsive HDD navigation and high quality audio system deepens your level of in-car experience.

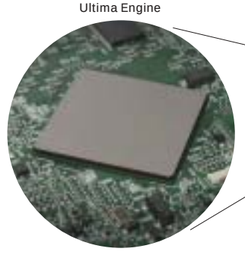
AVN70D

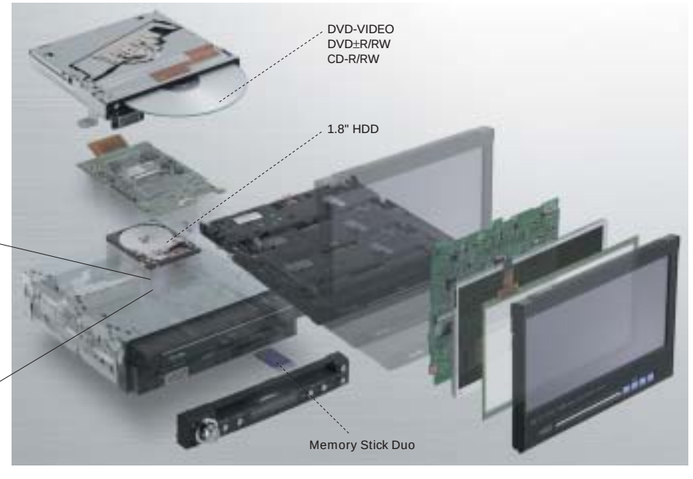
Industry first 1.8” HDD and integral screen, with all functions now in a single one-DIN unit.

! Top quality audio-visual reproduction and a first-class navigation system can be realized for all cars.

Ultima Engine

Integrating cutting-edge technology and high quality devices on a single chip, achieves fast processing speed and image-rendering performance.





Navigation

1 Searching

! You can choose the most effective way to search.

Define search area

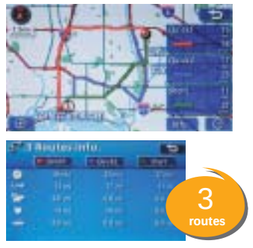
Press the button that corresponds to the area you wish the AVN’s navigation functions to cover. After that, 11 search patterns are available: Address search, Point of interest (POI), POI near, Map search, Intersection search, Freeway search, Emergency search, Previous, Coordinates, Telephone search.

2 Finding a Route

! You can add stops along the way after starting your trip and remap your route.

3 Routes Information

Quick 1, Quick 2, and Short are displayed. You can choose which route to select after comparing information.



Route Preference

Preset whether or not to use specific methods of travel and then choose from routes compiled on the basis of these preferences. Up to 10 areas to exclude from the route can also be set.

Enroute Stopping Points

Up to five stopping points can be set between the starting point and the destination. The most efficient route is then found.

Route Preview

Provides a convenient preview of the selected route from start to destination.

Must Travel Routing

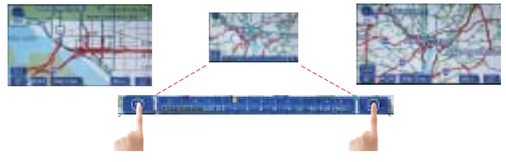
Up to 2 roads can be designated to always be included in the route.

3 Assistance Whenever Needed

! Voice guidance and split-screen information display facilitate safe driving.

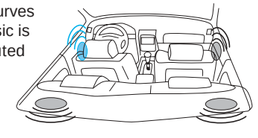
Versatile Zooming

Map scale can be adjusted from a magnification value of 150 feet to 250 miles for maximum flexibility.



Voice Announcements and Guidance

Tells you that you are close to turns, curves or heading in the right direction. If music is playing, the driver’s-side speaker is muted so the navigation voice can be heard.



Intersection Zooming

At intersections and on the expressway, the system automatically switches to show details on a zoomed-in display.

Landmark Displays

Useful landmarks such as gas stations, ATMs and restaurants can be displayed on-screen.

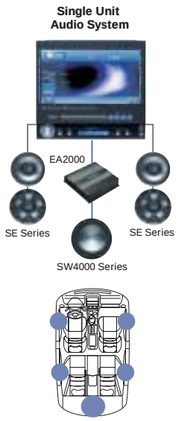
Auto Rerouting

Diverting from a recommended route accidentally or on purpose will call up a new alternate route instantly, just 3 seconds anywhere from coast to coast.

Audio

The best sound reproduction available from a MOSFET amplifier and advanced 24-bit ΔΣ DAC.

! Even in the car, you can hear the music as if the performers were right in front of you.



Time Alignment

Eliminate discrepancies in the time it takes sound to travel from the different speakers to the driver.

Crossover

Prevents overlaps in the output from the full-range speakers and subwoofer, which can cause output peaks.

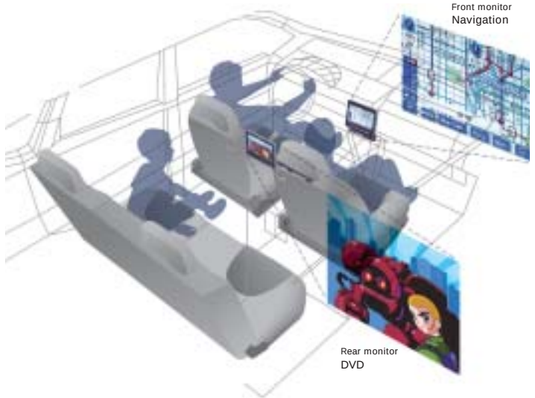
Parametric Equalizer

Enables you to select your favorite tonal curves by adjusting seven frequency bands.

Visual

Add an extra display to the one-DIN HDD system to use navigation functions and watch DVD video simultaneously.

! Link to a rear monitor and back-seat passengers can enjoy playing games or watching DVDs, even while the driver uses navigation function in the front.



Other features

Pic-CLIP

In addition to the preset wallpaper selections, you can set images stored on a Memory Stick Duo as the system wallpaper. Up to 100 images can be stored in memory.

Security system

The detachable front panel can easily be removed for security, which is useful for deterring theft from parked cars. An indicator light also flashes to deter unit tampering.

Detachable front panel

DCU105

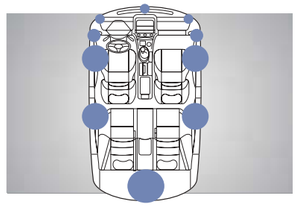
The 5.1ch AV Matrix Unit brings you to another level of exciting surround sound.

Built-in 5.1ch decoder

Handles Dolby Digital and DTS decoding. Dolby Pro Logic Ⅱ converts two-channel signals into simulated multi-channel output.

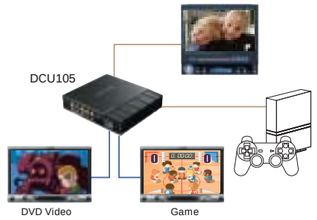
Hi-Fi/10ch speaker tune

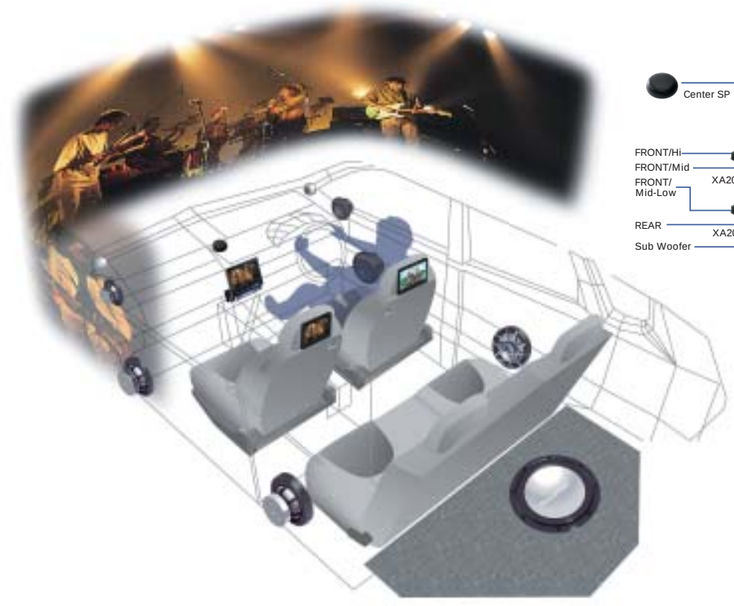
Speaker output and time alignment, crossover and parametric equalizer adjustment for each speaker up to a maximum of 10 channels are available. You can enjoy 5.1ch surround sound with 3-way hi-fi speaker systems.

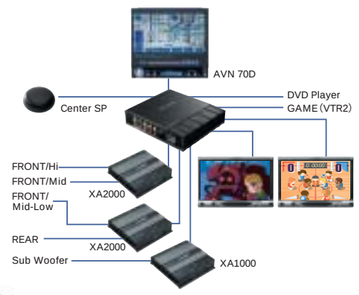


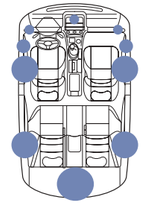
AV matrix function

Handles as many as five audio-visual inputs and up to two monitor outputs, which allows the passengers in the rear seats to enjoy their favorite video, music or games.









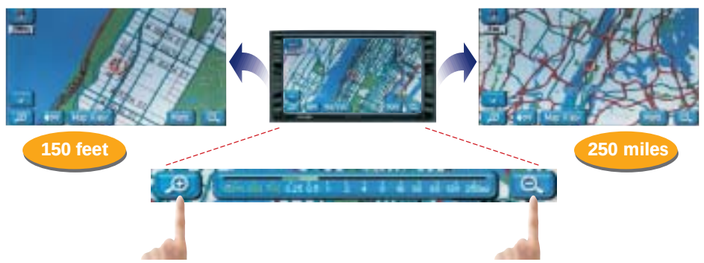
DVD-Video, CD and navigation — an all-in-one unit with easy and advanced controls

AVN50D/AVN20D

Versatile Zooming

Map scale can be adjusted from a magnification value of 150 feet to 250 miles for maximum flexibility.

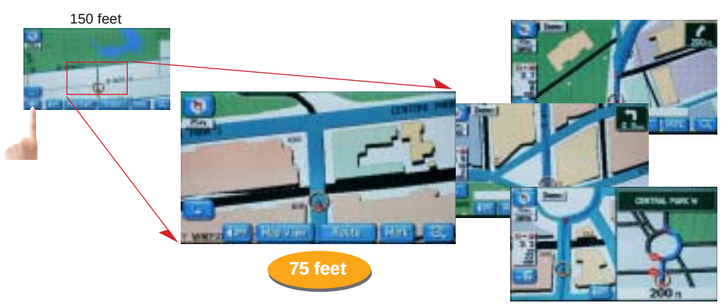
! You can adjust the scale freely to make it easier to see the map.



Street map

From 150 feet display, street maps zooming to 75 feet can be accessed and detailed road information displayed. Find landmarks and navigate unfamiliar intersections easily. Enjoy a smooth ride to your destination!

! An abundance of ready information brings you peace of mind when driving.



Advanced Utilities

Dual slots

Equipped as standard with two optical drives — one for DVD navigation and the other for playback of CDs.

! Multiple entertainment availability enhances the enjoyment of your driving time.

DVD-Video playback

Along with DVD navigation, the DVD slot of the AVN50D can also be used for DVD video playback. (Viewing DVDs is only possible when the car is not in motion.)

! Enables enjoyment of all the advantages of the stand-alone DVD player built into the AVN.

6.5” TFT touch control LCD

Using an intuitive control method, the high resolution touch control LCD makes operations easier. A special coating prevents smearing and reduces glare.

! Ergonomically designed interface for maximum operability with minimal input.

Startuner

The AVN unit incorporates ECLIPSE ’s top-rated FM/AM tuner section for noise-free output even in areas with poor reception.

! Offers a satisfying level of performance that extracts the most out of conventional broadcasts.

MP3-compatible

Compatible with the MP3 audio compression formats when recorded on CD-R/RW.

! Your music library can be brought into your car. Enjoy your favorite music anywhere.

GPS-compatible

Based on GPS information, the AVN unit can calculate vehicle position and provide useful information to the driver without speed pulse signals.

! Full AVN functionality for all types of cars.

Opening screen

You can customize the image that is shown when the navigation system is turned on. You can load any JPEG image onto the screen.

! Increases excitement and expectation when getting in the car.

Navigation

1 Searching

You can choose the most effective way to search.

Define search area

Press the button that corresponds to the area you wish the AVN's navigation functions to cover. After that, 9 search patterns are available: Address search, Point of interest (POI), Map search, Intersection search, Freeway search, Emergency search, Previous, and Coordinates.

2 Finding a Route

You can add stops along the way after starting your trip and remap your route.

3 Routes Information

Quick 1, Quick 2, and Short are displayed. You can choose which route to select after comparing information.

Detour input

Up to 10 areas to avoid because of chronic traffic congestion or other reasons can be input. The AVN will automatically work out the best detours that avoid the problem areas.

Enroute Stopping Points

Up to five stopping points can be set between the starting point and the destination. The most efficient route is then found.

Route Preview

Provides a convenient preview of the selected route from start to destination.

Must Travel Routing

Up to 2 roads can be designated to always be included in the route.

3 Assistance Whenever Needed

Voice guidance and split-screen information display facilitate safe driving.

Voice Announcements and Guidance

Tells you that you are close to turns, curves or heading in the right direction. If music is playing, the driver's-side speaker is muted so the navigation voice can be heard.

Intersection Zooming

At intersections and on the expressway, the system automatically switches to show details on a zoomed-in display.

Landmark Displays

Useful landmarks such as gas stations, ATMs and restaurants can be displayed on-screen.

Auto Rerouting

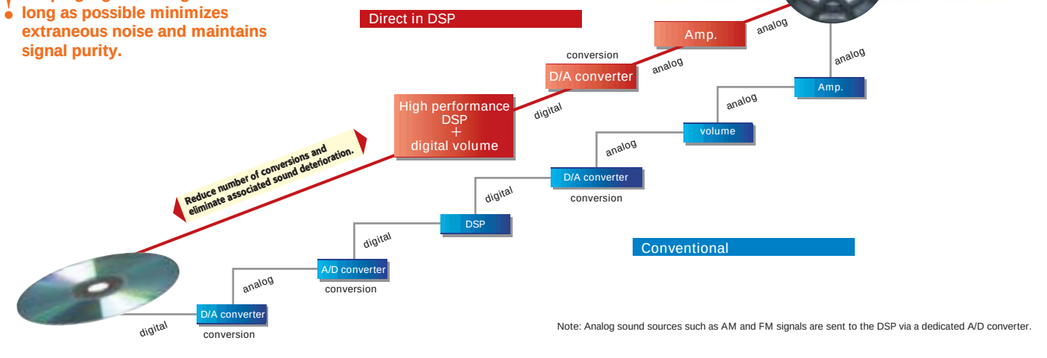
Diverting from a recommended route accidentally or on purpose will call up a new alternate route instantly, just 5.5 seconds anywhere from coast to coast.

Audio Features

All digital circuitry

Keeps all signals in purely digital form to achieve the best performance by minimizing distortion and ensuring a high S/N ratio. All parameters for processing — such as EQ, speaker time alignment, and even gain settings — are performed digitally.

Keeping signals in digital form as long as possible minimizes extraneous noise and maintains signal purity.



Note: Analog sound sources such as AM and FM signals are sent to the DSP via a dedicated A/D converter.

High performance DSP

Custom Digital Signal Processing (DSP) chips are used in each unit, handling the tasks of soundfield control, equalizer and listening position selector.

Proprietary DSP chip contains all processing functions necessary to set the most important user preferences.

Construction designed to produce good sound

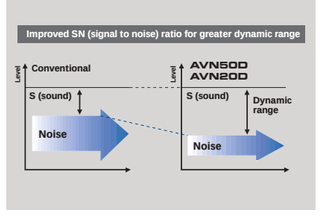
From selection of devices to PCB layout and positioning of parts, the focus was on designing to realize sound reproduction of the highest quality possible.

Good sound starts from the basic parts and construction. ECLIPSE performs static tests as well as conducting listening evaluations.

Advanced 24-bit ΔΣ D/A converter

Changes the digital signals into high-quality analog signals to enable optimal use of analog power amplifiers.

The better each stage of the audio processing, the better the resulting analog sound.



Power amplification 50 W × 4 channels

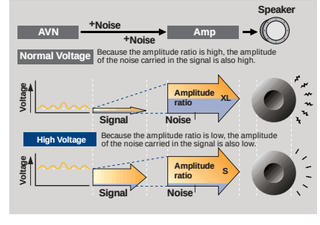
Incorporated into the well-designed audio circuits, the built-in power amplifier delivers sufficient output to optimally drive conventional speakers.

Outstanding power amplification section built into both AVN units to drive a conventional four speaker system.

High-voltage and low-impedance output

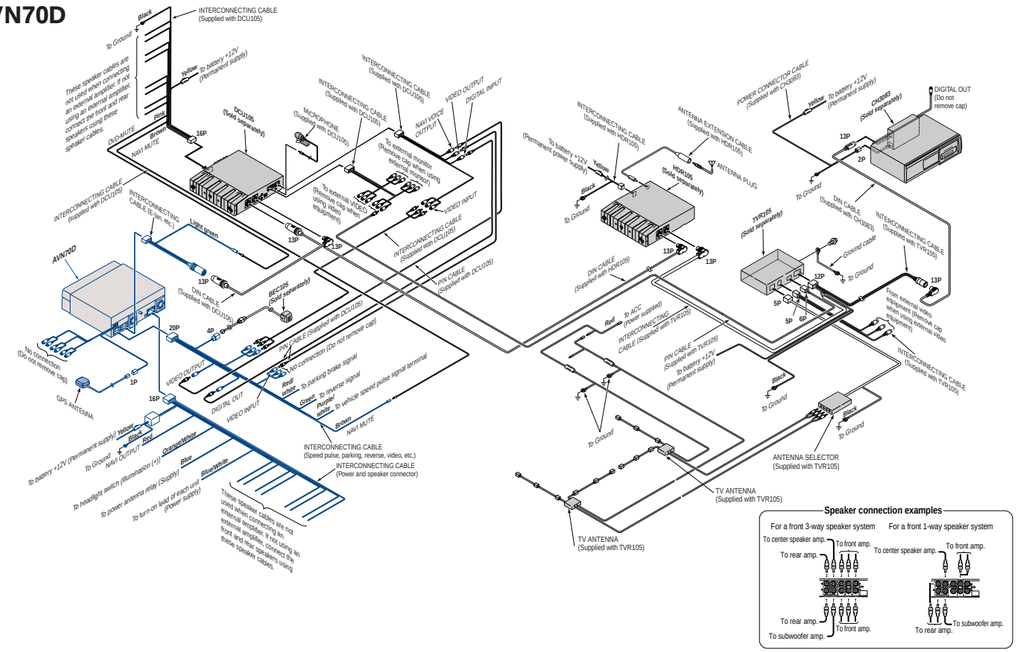
The preamplifier output is a high five volts with a low impedance of 55 Ω. This is a characteristic of audiophile-orientated products as it ensures the power amplification sections are driven optimally, with high signal-to-noise ratios and full dynamics.

Reproduction of clear sound with no noise distortion.

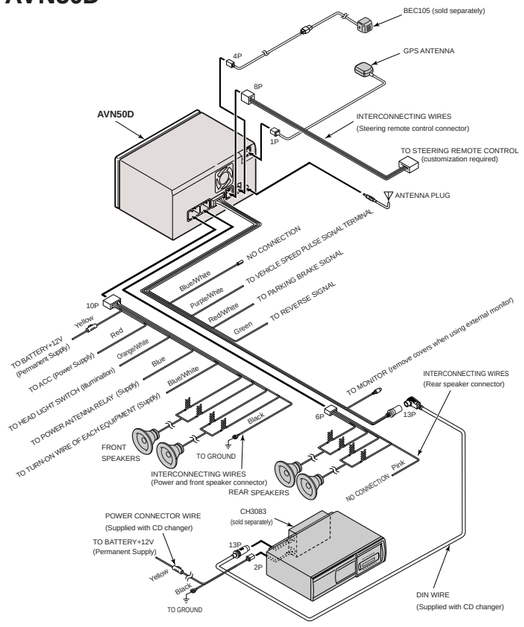


Wiring Diagram

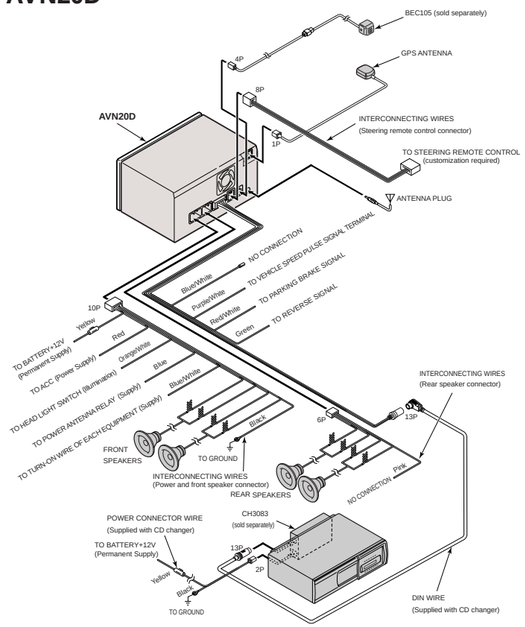
AVN70D



AVN50D



AVN20D



External input/output is possible. (Requires the following optional cords.) CRD-2: For external input (AVN50D, 20D) CRD-3: For external output (AVN50D)

Features List

	AVN70D	AVN50D	AVN20D
Media			
HDD	1.8″ 20GB	—	—
DVD	●	●	●
CD	●*1	●	●
Memory Stick Duo	●*2	—	—
Navigation			
Navi Device			
HDD Navigation	●	—	—
DVD Navigation	—	●	●
Ultima Engine	●	—	—
Displaying			
Display	7″ EGA	6.5″ EGA	6.5″ EGA
Split screen	●	●	●
Street name	●	●	●
Point-of-Interest (POI)	approx. 4,000,000 points	approx. 5,990,000 points	approx. 5,990,000 points
Street map	—	●	●
Operation			
Touch panel control	●	●	●
Searching			
Address search	●	●	●
POI Name	●	●	●
POI Category	●	—	—
Emergency search	Hospital/Police	Hospital/Police	Hospital/Police
Memory search	●	●	●
Previous search	●	●	●
Map search	●	●	●
Intersection search	●	●	●
Freeway search (ENTER/EXIT)	●	●	●
Coordinates search	●	●	●
Telephone number search	●	—	—
Home search	●	●	●
Quick access point search	●	●	●
Routing			
3 routes information	●	●	●
Detours	●	●	●
Enroute stopping points	●	●	●
Route preview	●	●	●
Assistance			
Voice announcement	English/French	English/French	English/French
Voice announce switch L/R	●	●	●
Voice announce volume control	●	●	●
Intersection zooming	●	●	●
Freeway guidance	●	●	●
Auto rerouting	●	●	●
Estimated arrival time	●	●	●
Security			
ECLIPSE Security Network	●	—	—
Detachable front panel	●	—	—
Other			
Select User	●	●	●

AUDIO	AVN70D only	AVN70D + DCU105 connected: Front-1 way system	AVN70D + DCU105 connected: Front-3 way system	AVN50D	AVN20D
DVD					
DVD-Video	●			●	—
DVD-R/RW, DVD+R/RW *3	●			●	—
Dolby Digital 5.1 ch.	—	●		—	—
dts 5.1 ch.	—	●		—	—
Dolby Pro Logic Ⅱ	—	●		—	—
CD					
CD	●			●	●
CD-R/RW	●			●	●
MP3	●			●	●
WMA	●			—	—
MS					
ATRAC3	● (Magic Gate Memory Stick Duo)			—	—
Audio function					
Time Alignment	Car type: 6 types, Speaker position: Tweeter Rear SP	Front (L/R), Rear (L/R), Center, Subwoofer	F-Hi (L/R), F-Mid (L/R), F-ML (L/R), R (L/R), Center, Subwoofer	—	—
Parametric EQ	7 bands	F/R/C: independent 5 bands, SW: 1 band		—	—
Graphic EQ	—	—	—	9 bands	9 bands
Crossover	●	F (HPF)/R (HPF)/ C (HPF)/SW (LPF)	F-Hi (HPF), F-Mid (HPF/LPF), F-ML (HPF/LPF), R (HPF), SW (LPF)	—	—
Multi-Harmonizer	MP3/WMA/ATRAC3			MP3	MP3
Listening Position selector	FR, FL, F, R, OFF			●	●
Non Fader Level/Phase control	●			●	●
Woofer output	●			—	—
E-iSERV Connectivity	—	Audio customize		—	—
Audio device					
Amplifier	MOSFET 50W × 4			50W × 4	40W × 4
Advanced 24-Bit ΔΣ DAC	●			●	●
Pre Amp Output	F/R/NF, 2V	Front/Rear/Center/Subwoofer, 5V		F/R/NF, 5V	—
Output	●	●		—	—
Input	●	●		(Optional)	(Optional)
Digital Output (Coaxial)	●			—	—
Digital Input (Coaxial)	—	●		—	—
Digital Input (Optical)	—	●		—	—
ANALOGUE RADIO TUNER					
FM	FM1: 6			FM1: 6	FM1: 6
AM	AM: 6			AM: 6	AM: 6
OPTIONAL					
Ready for iPod®	▲*4			▲*4	▲*4
HD radio-ready	●			●	●
SIRIUS radio-ready	●			●	●
CD Changer-ready	2 (daisy chain)			2 (daisy chain)	2 (daisy chain)
Rear View Camera-ready	●			●	●
TV-Tuner ready	●			—	—

*1 Ripping not available
*2 Memory Stick Duo is sold separately and compatible with 128MB or under.
*3 Please refer to Note and Precautions.
*4 partial control

Specifications

	AVN70D	AVN50D	AVN20D
GENERAL			
Power output	50W × 4 (MAX)	50W × 4 (MAX)	40W × 4 (MAX)
RMS power output*	13W × 4 (1kHz, 1%THD 4 Ω)	15W × 4 (1kHz, 1%, 4 Ω)	15W × 4 (1kHz, 1%, 4 Ω)
Dimensions (W × H × D)	7″ × 2″ × 6-1/2″ (180 × 50 × 165mm)	7″ × 4″ × 6-1/2″ (180 × 100 × 165mm)	7″ × 4″ × 6-1/2″ (180 × 100 × 165mm)
Weight	5.1lbs(2.3kg)	6.6lbs(3.0kg)	6.6lbs(3.0kg)
DISPLAY			
Display	7″ wide (16:9), low-glare panel	6.5″ wide (16:9), low-glare panel	6.5″ wide (16:9), low-glare panel
Resolution	336,960 dots (480 × 234 × 3)	280,800 dots (400 × 234 × 3)	280,800 dots (400 × 234 × 3)
Screen aspect ratio	4 types	4 types	4 types
FM TUNER			
Frequency range	87.75 — 107.9MHz (200kHz step)	87.75 — 107.9MHz (200kHz step)	87.75 — 107.9MHz (200kHz step)
Usable sensitivity	19dBf (98.1MHz)	13dBf (98.1MHz)	13dBf (98.1MHz)

Specifications

* Meets CEA2006 guidelines

	AVN70D	AVN50D	AVN20D
AM TUNER			
Frequency range	530 — 1.710kHz (10kHz step)	530 — 1.710kHz (10kHz step)	530 — 1.710kHz (10kHz step)
Usable sensitivity	22μV	22μV	22μV
CD SECTION			
Frequency response	20 — 20,000Hz ±3dB	20 — 20,000Hz ±1dB	20 — 20,000Hz ±1dB
Total harmonic distortion	0.04% (0dB 1kHz)	0.01% (0dB 1kHz)	0.01% (0dB 1kHz)
MS SECTION			
Frequency response	20 — 20,000Hz ±3dB	—	—
Total harmonic distortion	0.04% (0dB 1kHz)	—	—
EQUALIZER SECTION			
Equalizer	63Hz — 16kHz (25 points) ±10dB	63Hz — 12kHz (1/2oct.step) ±10dB	63Hz — 12kHz (1/2oct.step) ±10dB
HDD SECTION			
Operating temperature range	–10 — 65°C	—	—
Storage temperature range	–40 — 85°C	—	—